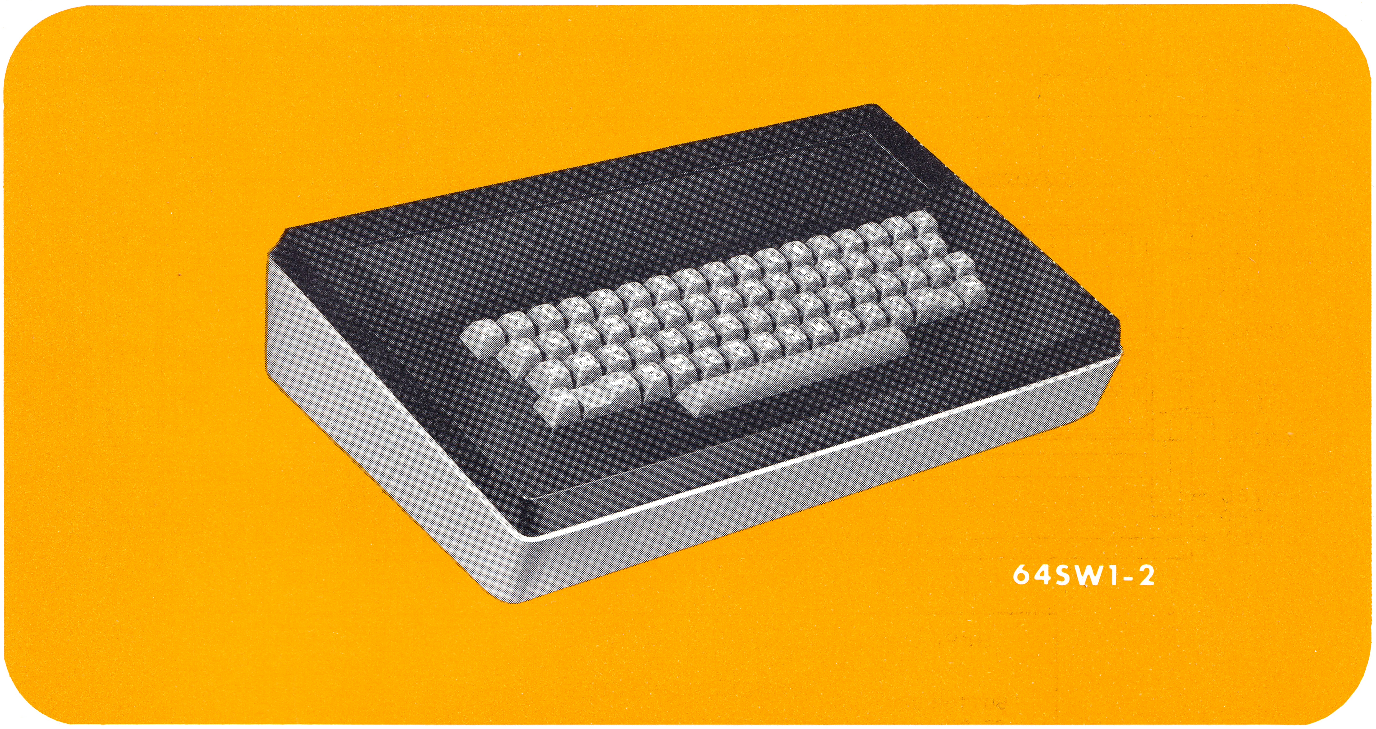
ISSUE 3

Solid State Keyboard

Product Sheet 64SW1-2



Features

- *SOLID STATE KEYS -- GIVE GREATER RELIABILITY AND LONGER LIFE.*
- *STOCK KEYBOARD -- FOR "OFF-THE-SHELF" AVAILABILITY.*
- *FULL 128 CHARACTER USASCII CODE ASSIGNMENT -- TOTAL CODE CAPABILITY FOR DEFINED COMMUNICATION STANDARD.*

A new generation in keyboards is here with this completely solid state keyboard. The only moving part in the keyboard is the switch plunger. To be sure that this part meets the reliability of the rest of the keyboard, we made it from extremely durable plastic with a large bearing surface.

An integrated circuit just 0.040-inch square, actuated by a magnet, uses the Hall effect to produce an analog control voltage. Hall voltage is converted into a digital output with a trigger circuit, amplified, and fed into the encoding matrix of our keyboard.

The switch outputs are extended to integrated circuit encoding packs which provide an eight bit output. (Eighth bit is odd parity.) The keyboard may be interfaced to your equipment with a standard card edge connector.

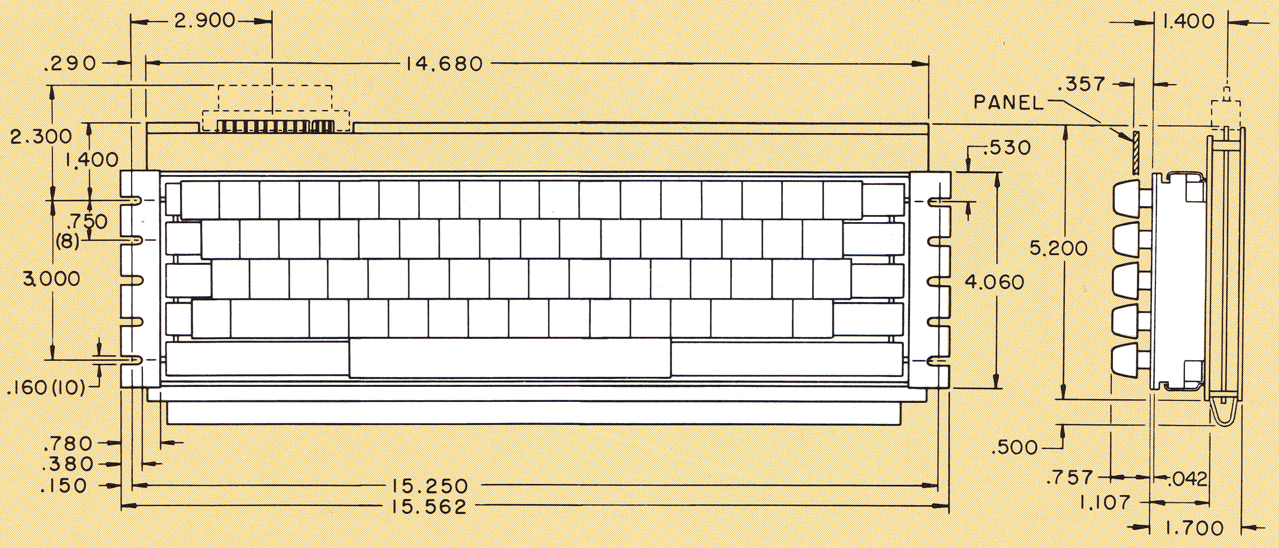
This keyboard also includes our two-key rollover option which is an electronic interlock. This option permits typing at "burst" speeds without generating a system error. It blocks the strobe signal to prevent reading of the data bits during the time that two keys are operated. A strobe output is provided which "tells" the system that data is present and ready to be read. Since the solid state switch has a bounce-free output, a delay in the strobe is not required.

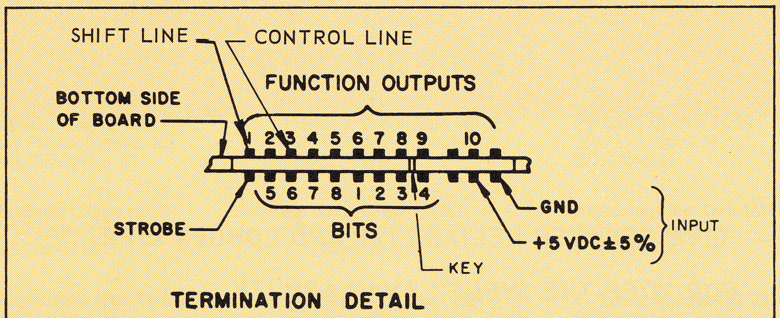
For operator convenience, a shift lock key feature maintains the keyboard in the shifted mode. This key is a two-level alternate action switch and all circuitry necessary to maintain shift is self-contained within the keyboard. The two-level key also gives the operator a visual indication of which mode the keyboard is in.

A very short delivery time is possible since the keyboards are built and in stock, ready for your order.

MICRO SWITCH
FREEPORT, ILLINOIS 61032
A DIVISION OF HONEYWELL
IN CANADA: 740 ELLESMERE ROAD, SCARBOROUGH, ONTARIO

Specifications


2.900
.290
14.680
2.300
1.400
.750
(8)
3.000
.160 (10)
.780
.380
.150
15.250
15.562
1.400
.357
PANEL
.530
5.200
4.060
.500
.757
1.107
.042
1.700


SHIFT LINE
CONTROL LINE
FUNCTION OUTPUTS
BOTTOM SIDE
OF BOARD
1 2 3 4 5 6 7 8 9 10
5 6 7 8 1 2 3 4
STROBE
BITS
KEY
GND
+5 VDC ± 5%
INPUT

TERMINATION DETAIL

POWER REQUIREMENTS

+5 volts DC regulated ±5%
1 ampere maximum

OUTPUT LEVELS

Negative logic: +5 volt DTL compatable

Logic "0": +2.6 VDC minimum @ 0.12 milliamp

Logic "1": +0.45 VDC maximum @12 milliamps

Function Key Ouputs: +3.15 VDC minimum @ 1 to 10 milliamps current source

Key Unoperated: +0.25 VDC maximum with load resistance of 2,500 ohms or less.

STROBE OUTPUT LEVELS

All keys in unoperated state: +2.6 VDC minimum @ 0.12 milliamps
One Key Operated: +0.45 VDC maximum @ 12.0 milliamps
Two-Key Rollover Condition: +2.6 VDC @ 0.12 milliamps.

KEY ASSIGNMENTS

58 keys encoded USASCII
 2 control keys
 2 shift keys
 1 shift lock key
 1 space bar

OUTPUT INTERFACE

Card-edge output accepts standard connectors such as: Cinch-Jones 251-12-30-160. This connector is furnished with a between contact key. Winchester 8BD 12 has a between contact key but a separate catalog listing 109-8597. An equivalent connector may be used.

WEIGHT

With Enclosure: 9 lbs. (approximately)
Without Enclosure: 3.75 lbs. (approximately)

BUTTONS

MICRO SWITCH double shot-molded truncated buttons, gray with white legends. Shift keys –– two-unit, two-level with legend on upper level.

KEY ROW OFFSET

3/8 – 3/16 – 3/8 inch offset between rows. (Keys on 3/4 inch centers)

BUTTON ORIENTATION

Sloped 13 degrees to horizontal

OPTIONS INCLUDED

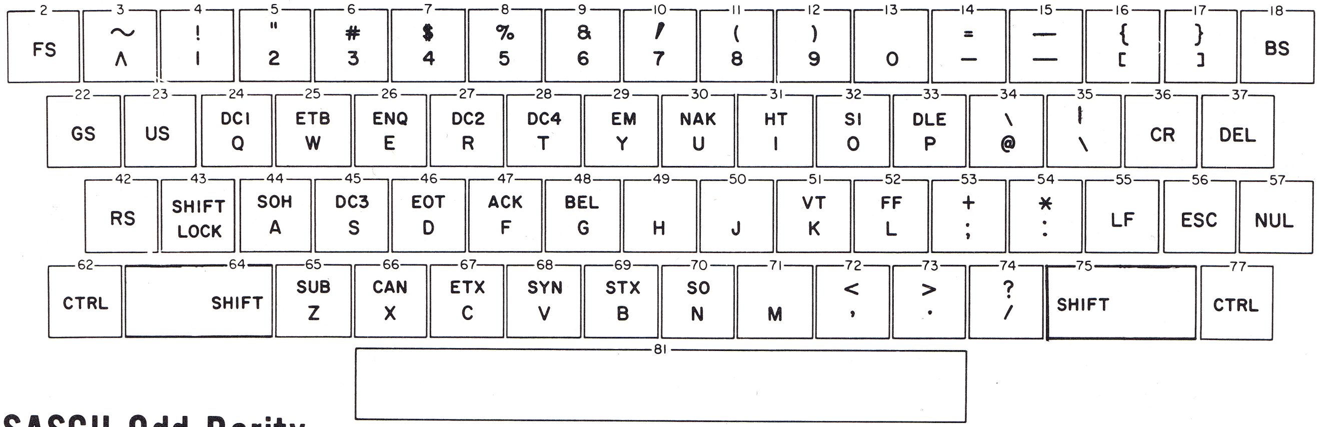
Two Key Rollover
Strobe (non delayed)
Shift Lock
Enclosure

SYSTEM CONTROL (See Termination Detail)

A shift line is provided to permit programming of your system to initiate keyboard shift. This line can also be used for mode indication within your system.

1. ***Shift Operation:*** Shift of the keyboard can be initiated from your system by providing a current source input of 3.15 Volts DC minimum @ 10 milliamps maximum to the shift line termination pad (see termination detail). An open circuit (100 microamps maximum leakage) is required for the unshifted mode. The shift line must not be clamped to ground.
2. ***Control Operation:*** Control mode operation can be initiated from your system by using the control line termination pad. The electrical load information listed above for shift operation will also apply to control operation.
3. ***Mode Indication:*** The shift line and control line can also be used for mode indication to your system, provided that the system circuit load resistance is greater than 2,000 ohms to ground or 200,000 ohms to the positive supply. (An external emitter follower circuit with a current sinking resistor can be used to increase the load driving capability.

Code Assignment



USASCII Odd Parity

KEY NO.	UNSHIFTED MODE			SHIFTED MODE			CONTROL MODE		
	BITS 765	4321	P	BITS 765	4321	P	BITS 765	4321	P
2	001	1100	0	001	1100	0	001	1100	0
3	101	1110	0	111	1110	1	001	1110	1
4	011	0001	0	010	0001	1	011	0001	0
5	011	0010	0	010	0010	1	011	0010	0
6	011	0011	1	010	0011	0	011	0011	1
7	011	0100	0	010	0100	1	011	0100	0
8	011	0101	1	010	0101	0	011	0101	1
9	011	0110	1	010	0110	0	011	0110	1
10	011	0111	0	010	0111	1	011	0111	0
11	011	1000	0	010	1000	1	011	1000	0
12	011	1001	1	010	1001	0	011	1001	1
13	011	0000	1	011	0000	1	011	0000	1
14	010	1101	1	011	1101	0	010	1101	1
15	101	1111	1	101	1111	1	001	1111	1
16	101	1011	0	111	1011	1	001	1011	1
17	101	1101	0	111	1101	1	001	1101	1
18	000	1000	0	000	1000	0	000	1000	0
22	001	1101	1	001	1101	1	001	1101	1
23	001	1111	0	001	1111	0	001	1111	0
24	111	0001	1	101	0001	0	001	0001	1
25	111	0111	1	101	0111	0	001	0111	1
26	110	0101	1	100	0101	0	000	0101	1
27	111	0010	1	101	0010	0	001	0010	1
28	111	0100	1	101	0100	0	001	0100	1
29	111	1001	0	101	1001	1	001	1001	0
30	111	0101	0	101	0101	1	001	0101	0
31	110	1001	1	100	1001	0	000	1001	1
32	110	1111	1	100	1111	0	000	1111	1
33	111	0000	0	101	0000	1	001	0000	0
34	100	0000	0	110	0000	1	000	0000	1
35	101	1100	1	111	1100	0	001	1100	0
36	000	1101	0	000	1101	0	000	1101	0

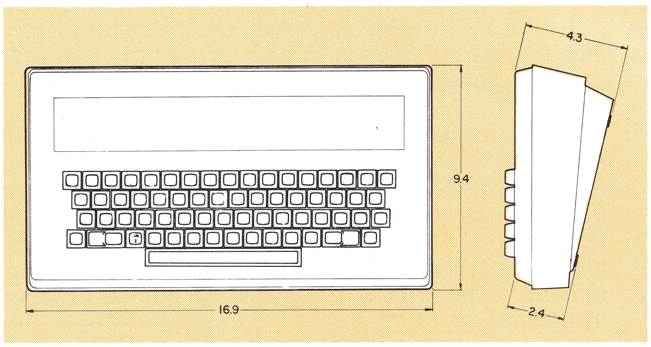
KEY NO.	UNSHIFTED MODE			SHIFTED MODE			CONTROL MODE		
	BITS 765	4321	P	BITS 765	4321	P	BITS 765	4321	P
37	111	1111	0	111	1111	0	001	1111	0
42	001	1110	1	001	1110	1	001	1110	1
43	SHIFT LOCK								
44	110	0001	0	100	0001	1	000	0001	0
45	111	0011	0	101	0011	1	001	0011	0
46	110	0100	0	100	0100	1	000	0100	0
47	110	0110	1	100	0110	0	000	0110	1
48	110	0111	0	100	0111	1	000	0111	0
49	110	1000	0	100	1000	1	000	1000	0
50	110	1010	1	100	1010	0	000	1010	1
51	110	1011	0	100	1011	1	000	1011	0
52	110	1100	1	100	1100	0	000	1100	1
53	011	1011	0	010	1011	1	011	1011	0
54	011	1010	1	010	1010	0	011	1010	1
55	000	1010	1	000	1010	1	000	1010	1
56	001	1011	1	001	1011	1	001	1011	1
57	000	0000	1	000	0000	1	000	0000	1
62	CONTROL*								
64	SHIFT *								
65	111	1010	0	101	1010	1	001	1010	0
66	111	1000	1	101	1000	0	001	1000	1
67	110	0011	1	100	0011	0	000	0011	1
68	111	0110	0	101	0110	1	001	0110	0
69	110	0010	0	100	0010	1	000	0010	0
70	110	1110	0	100	1110	1	000	1110	0
71	110	1101	0	100	1101	1	000	1101	0
72	010	1100	0	011	1100	1	010	1100	0
73	010	1110	1	011	1110	0	010	1110	1
74	010	1111	0	011	1111	1	010	1111	0
75	SHIFT *								
77	CONTROL*								
81	010	0000	0	010	0000	0	010	0000	0

*SEE SYSTEM CONTROL

(Continued, next page)

ENCLOSURE

The enclosure cover is dark gray high strength ABS (Acrylonitrile-Butadiene-Styrene) and the base is light gray cast aluminum alloy. Keyboard may be purchased without enclosure.



Ordering Information

Contact your nearest MICRO SWITCH branch office and a Field Engineer will be glad to work with you in satisfying your keyboard requirements: proper selection, pricing, and delivery scheduling. These experienced keyboard experts will provide sound and practical answers to your needs.

Branch Offices

Atlanta, Georgia 30324
500 Plaster Avenue, N.E.
404/875-9561

Bettendorf, Iowa 52722
1810 State Street
319/355-6456

Binghamton, New York 13901
1200 Arterial Hwy.
607/723-7993

Boston, Massachusetts 02135
1230 Soldiers Field Road
617/254-3939 & 254-8730

Chicago, Illinois 60646
7350 North Lincoln Avenue
312/478-9290

Cleveland, Ohio 44103
1001 East 55th Street
216/881-0300

Dallas, Texas 75206
6000 North Central Expressway
214/363-5441

Dayton, Ohio 45404
2314 Stanley Avenue
513/461-4480

Denver Office
Englewood, Colorado 80110
7825 E. Prentice Avenue
303/771-2340

Detroit, Michigan 48227
13631 Plymouth Road
313/834-6020

Hartford, Connecticut 06101
885 Wethersfield Avenue
203/527-0178

Houston, Texas 77042
8440 Westglen Drive
713/785-3200

Indianapolis, Indiana 46241
5739 Professional Circle
317/243-0831

Kansas City, Missouri 64130
4650 East 50 Highway
816/923-2582

Long Island City, New York 11101
24-30 Skillman Avenue
212/786-5005

Los Angeles, California 90022
6620 Telegraph Road
213/723-6611

Milwaukee, Wisconsin 53222
2979 North Mayfair Road
414/771-6300

Minneapolis, Minnesota 55408
Twin City Branch
415 East 27th Street
612/332-5222

Philadelphia Office
Bala Cynwyd, Pa. 19004
One Decker Square
215/835-2330

Phoenix, Arizona 85013
4129 North Seventh Avenue
602/264-6521

Portland, Oregon 97214
2600 S. E. Belmont
503/235-8411

Rochester, New York 14611
40 West Avenue
716/328-0373

St. Louis, Missouri 63139
2146 Hampton Avenue
314/647-6100

San Diego, California 92110
1515 Morena Blvd.
714/276-4162

San Francisco, California 94124
2 Dorman Avenue
415/826-9100

Seattle, Washington 98109
401 Pontius Avenue North
206/682-4580

Syracuse, New York 13201
811 Orwood Place
315/437-2851

Union Office
Westfield, N.J., 07090
574 Springfield Avenue
201/233-9200

Washington, D.C.
McLean, Va. 22101
1766 Old Meadow Road
703/893-4660

Wichita, Kansas 67216
2801 South Madison
316/591-3435

MICRO SWITCH
FREEPORT, ILLINOIS 61032
A DIVISION OF HONEYWELL
IN CANADA: 740 ELLESMERE ROAD, SCARBOROUGH, ONTARIO

84-20030B MS-4-69 PRINTED IN U.S.A.